

Remarks

In view of the above amendments and the following remarks, reconsideration of the rejections and further examination are requested.

Initially, claim 30 has been amended so as to correct a minor typographical error contained therein. The scope of claim 30 has not been affected by this amendment.

Claims 1, 2, 4-10, 12-17, 19-27, 29-50 and 53-62 have been rejected under 35 U.S.C. §102(b) as being anticipated by Neushäfer (WO 96/35940). Claims 3 and 28 have been rejected as being unpatentable over Neushäfer in view of Fattinger (US 5,455,178). Claims 11 and 51 have been rejected as being unpatentable over Neushäfer in view of Rudigier (US 5,738,825). Claim 18 has been rejected as being unpatentable over Neushäfer in view of Sunagawa (US 5,101,459). Claim 52 has been rejected as being unpatentable over Neushäfer in view of Groger (US 5,577,137).

Claims 1, 23, 36, 41, 44, 53, 55, 56 and 58-62 have been amended so as to further distinguish the present invention from the references relied upon in the rejections. As a result, the rejections are submitted to be inapplicable to the amended claims for the following reasons.

Claim 1 is patentable over Neushäfer, relied upon in the rejection, since claim 1 recites a sensor platform having, in part, an optical film waveguide comprising a first optically transparent layer, a second optically transparent layer having a lower refractive index than the first optically transparent layer, and a grating structure being operable to incouple excitation light to a plurality of laterally separated measurement areas, wherein the plurality of laterally separated measurement areas are located on the first optically transparent layer, the grating structure is continuously modulated over a complete area of the plurality of laterally separated measurement areas, and the grating structure is operable to prevent a cross-talk of luminescence generated in any one measurement area of the plurality of laterally separated measurement areas and coupled back into the first optically transparent layer to any other measurement area of the plurality of laterally separated measurement areas. Neushäfer fails to disclose or suggest the grating structure as recited in claim 1.

Neushäfer discloses a device having a laser diode 13, a coupling-in grating 3 located on a sensor platform 8, a coupling-out grating 3' also located on the sensor platform 8, and a detector

14. A first filter 9 is located between the laser diode 13 and the coupling-in grating 3 and a second filter 9 is located between the coupling-out grating 3' and the detector 14. The sensor platform 8 contains a waveguide 1 such that light enters the waveguide 1 from the coupling-in grating 3 and exits the waveguide 1 from the coupling-out grating 3'. A flow through cell 11 is attached to the bottom of the sensor platform 8 via a plurality of seals 10, thereby creating a sample space 12 between the sensor platform 8 and the flow through cell 11. (See Figure 6 and page 29).

The rejection indicates that the coupling-in grating 3 and the coupling-out grating 3' of Neushäfer correspond to the grating structure recited in claim 1. However, claim 1 now recites that the grating structure is continuously modulated over a complete area of the plurality of laterally separated measurement areas. As can clearly be seen from Figures 1a-2d and 6 of Neushäfer, absolutely none of the embodiments of Neushäfer discloses or suggests that the coupling-in grating 3 and/or the coupling-out grating 3' is continuously modulated over the complete area of the measurement areas. Instead, the coupling-in grating 3 is located on one side of the measurement areas and the coupling-out grating 3', if present, is located on the opposite side of the measurement areas. As a result, Neushäfer fails to disclose or suggest this feature of claim 1.

Further, the rejection indicates that the coupling-in grating 3 and the coupling-out grating 3' of Neushäfer are operable to prevent a cross-talk of luminescence generated in any one measurement area of the plurality of laterally separated measurement areas and coupled back into the first optically transparent layer to any other measurement area of the plurality of laterally separated measurement areas. However, as previously discussed, the coupling-in grating 3 and the coupling-out grating 3' are not disclosed or suggested in Neushäfer as being capable of preventing cross-talk of luminescence. Instead, the prevention of cross-talk in the device of Neushäfer is accomplished by the divisions 2 located between the sections of the waveguiding layer 1. In the "Response to Arguments" section of the Office Action, this argument is deemed unpersuasive. The following comments are provided in rebuttal to the Examiner's remarks.

In determining that the above-mentioned argument was unpersuasive, the Examiner cited a portion of the specification of the present invention which states that "[t]he latter measurement

areas, forming a segment, are prevented, by outcoupling of guided, backcoupled luminescence light and of guided excitation light by grating structure (II), from cross-talk to possible further measurement areas or segments located beyond the grating structure (II), in this case serving as an outcoupling grating.” The Examiner then relies on this portion of the specification to interpret the limitation in claim 1 of the grating structure being operable to prevent a cross-talk of luminescence as being met by any grating structure that acts as an outcoupling grating. However, this reasoning is flawed.

It is unclear how the Examiner can conclude that the cited portion of the specification can be relied upon as implying that all outcoupling gratings necessarily prevent cross-talk of luminescence generated in any one measurement area of the plurality of laterally separated measurement areas and coupled back into the first optically transparent layer to any other measurement area of the plurality of laterally separated measurement areas. The section of the specification at issue discusses a particular example of the present invention whereby a grating structure is capable of outcoupling light and preventing cross-talk of luminescence. There is nothing in this section of the specification that even remotely implies that all outcoupling grating structures necessarily prevent cross-talk of luminescence. Therefore, it is clear that the matter in which the Examiner is relying on this section of the specification, which discusses a specific example of the invention, is improper.

Further, it is noted that the Examiner states that the claims of the present invention do not preclude structural elements other than a grating structural from preventing cross-talk. This statement appears to be in response to the above comments that the divisions 2 in Neushäfer prevent cross-talk and not the grating structures 3 and 3’. It is apparent that the Examiner is correct that the claims do not preclude such structural elements. However, claim 1 does require a grating structure that is operable to prevent a cross-talk of luminescence generated in any one measurement area of the plurality of laterally separated measurement areas and coupled back into the first optically transparent layer to any other measurement area of the plurality of laterally separated measurement areas, which is clearly not disclosed or suggested in Neushäfer, despite the Examiner’s indication otherwise. As a result, it is clear that Neushäfer fails to disclose or suggest the present invention as recited in claim 1.

In sections 7-10, the Examiner has relied on (1) Fattinger, (2) Rudigier, (3) Sunagawa, and (4) Groger as disclosing (1) unidiffractive and multidiffractive gratings, (2) a grating structure having a laterally varying periodicity, (3) a grating having a laterally varying grating depth, and (4) polarization-selective detection, respectively. However, even if the Examiner's reliance on these references is accurate, none of these references discloses or suggests the grating structure as recited in claim 1.

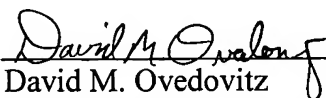
As for claims 23, 36, 41, 44, 53, 55, 56 and 58-62, they are patentable over the references relied upon in the rejections for reasons similar to those set forth above in support of claim 1. That is, claims 23, 36, 41, 44, 53, 55, 56 and 58-62 each recite, in part, a grating structure that is continuously modulated over a complete area of the plurality of laterally separated measurement areas, wherein the grating structure is operable to prevent a cross-talk of luminescence generated in any one measurement area of the plurality of laterally separated measurement areas and coupled back into the first optically transparent layer to any other measurement area of the plurality of laterally separated measurement areas, which feature is not disclosed or suggested in the references.

Because of the above-mentioned distinctions, it is believed clear that claims 1-62 are allowable over the references relied upon in the rejections. Furthermore, it is submitted that the distinctions are such that a person having ordinary skill in the art at the time of invention would not have been motivated to make any combination of the references of record in such a manner as to result in, or otherwise render obvious, the present invention as recited in claims 1-62. Therefore, it is submitted that claims 1-62 are clearly allowable over the prior art of record.

In view of the above amendments and remarks, it is submitted that the present application is now in condition for allowance. The Examiner is invited to contact the undersigned by telephone if it is felt that there are issues remaining which must be resolved before allowance of the application.

Respectfully submitted,

Andreas ABEL et al.

By: 
David M. Ovedovitz
Registration No. 45,336
Attorney for Applicants

DMO/jmj/kjf
Washington, D.C. 20006-1021
Telephone (202) 721-8200
Facsimile (202) 721-8250
September 16, 2005